



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Yasumasa UYAMA
Title: PROTECTED COMMUNICATION SYSTEM
Appl. No.: 10/021,052
Filing Date: December 19, 2001
Examiner: Unassigned
Art Unit: 2131

SECOND PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, Applicants respectfully request that the above-identified application be amended as follows:

In the Drawings:

Please substitute the attached sheets (Figs. 3, 17 and 18) of hand-corrected drawing for the formal drawing originally filed with the application. Note that Figures 17 and 18 have been substituted to change Japanese characters to English characters.

In the Specification:

Please amend the specification as follows. A marked-up version showing changes is also attached.

On Page 19, 1st full paragraph:

If a numeral x is to be transmitted, the enciphering software C of Mr. Ito and Mr. Saito, calculates $x^e \equiv c \pmod{n}$, and c is transmitted to Mr. Akiyama. The receiver, Mr. Akiyama obtains x from $x^d \equiv x \pmod{n}$. In other words, x is obtained by using the modulo n calculation from the d th power of c .

On page 30, last paragraph

Consider a case using 2 character arrangements. Regarding telephones, the problem of the processing speed is the largest problem. Among the operation having reversibility and also performing at high speed, is an operation taking exclusive or (XOR). Calculated as following, $OXORO=O$, $OXOR1=1$, $1XORO=1$, and $1XOR1=O$. The basic mode using this regarding ordered pair system is described in the following.

On Page 31, delete the 1st, 2nd, 4th, and 5th full paragraphs, and replace these paragraphs with the following:

Consider a case of a telephone communication between Mr. S and Mr. R. For example, the content of the telephone memory of Mr. S and the content of the telephone memory of Mr. R are shown in figure 17 (a), and figure 17 (b) respectively. In the figures, words in quotation marks are alphabets representing Japanese characters with hyphens separating each represented character.

Suppose that Mr. S said to Mr. R, < こんにちは > "Ko-ni-ni-chi-wa" meaning "hello" in Japanese...>. The result of digitalization of the analog voice signal is, 0x1216, 0x0800, 0x1182.... When JIS code was used as the character code, < あおいそら > ("a-o-i-so-ra" a Japanese word for "blue sky" consisting of 5 characters written using Japanese characters called Hiragana)...> will be, 0x2422, 0x242A, 0x2424, 0x243D, 0x2469..., and < Oaufefhgoo...> becomes, 0x4f, 0x62....

0x1216, when displayed per bit is, 0001 0010 0001 0110,

0x2422, when displayed per bit is, 0010 0100 0010 0010.

0x4f 0x61, when displayed per bit is, 0100 1111 0110 0001.

Mr. R receives this value 0x7955.... First, regarding 0x7955=0111 1001 0101 0101, XOR is obtained by using the saved character code, < あおいそら > (a-o-i-so-ra)...> is 0x2422, 0x242A, 0x2424, 0x243D, 0x2469,..., < Oaufefhgoo...> is 0x4f, 0x62,... The digitalized original voice signal is obtained by continuing this process. The voice of Mr. S, < こんにちは > (Ko-ni-ni-chi-wa)...> can be heard by converting the digital signal back to the analog signal.

The response from Mr. R, < S さんですか ("S sa-n de-su-ka" meaning "Is this Mr. S" in Japanese)...> is enciphered by enciphering keys <abcdefg...> and < なにかな ("na-ni-ka-na" a Japanese word for "what is it" consisting of 4 characters written in Hiragana)...>, then it is deciphered in the telephone machine of Mr. S by deciphering key <abcdefg...> and <なにかな(na-ni-ka-na)...>, and the voice of Mr. R < S さんですか (S sa-n de-su-ka)...> can be heard.

On Page 32, 4th full paragraph:

For example, as shown in figure 18 (a), the use of character arrangement having the length of 3 <はてな("ha-te-na" a Japanese word for "let me see" consisting of 3 characters written in Hiragana)...> and character arrangement having the length of 5 <あおいそら(a-o-i-so-ra)...>, would be the same as using a key having a length of 15.

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons which follow.

We request that the requirement to amend the drawings be rescinded because the number of characters in Japanese characters has significance. Thus, a change in the drawing causes a comparable change in the specification and the need for explanation.

Assuming that the drawing requirement is not rescinded, we submit amended Figs 17 and 18 and a preliminary amendment to the specification to maintain correspondence with the amended figures.

The explanation to our amendments are as follows. In order to eliminate Japanese characters from the figures, we had to represent the Japanese characters with equivalent alphabets. Since the number of characters used for each key has significance, we have separated each character by using hyphens, converted the Japanese characters into equivalent alphabets and placed quotation marks around the word.

In order to maintain correspondence between the figures and the specification, we have inserted explanations after each Japanese character in the specification. Also, we have inserted an explanation of the quotation marks and hyphens at the end of the first full paragraph on P. 31.

A further clarification of the translation of the first full paragraph on page 19 and correction of typographical errors in the last paragraph on page 30 have also been made.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

Date March 15, 2002

FOLEY & LARDNER

Washington Harbour

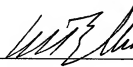
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By



William T. Ellis

Attorney for Applicant

Registration No. 26,874

Should additional fees be necessary in connection with the filing of this paper, or if a petition for extension of time is required for timely acceptance of same, the Commissioner is hereby authorized to charge Deposit Account No. 19-0741 for any such fees; and applicant(s) hereby petition for any needed extension of time.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

On Page 19, 1st full paragraph:

If a numeral x is to be transmitted, the enciphering software C of Mr. Ito and Mr. Saito, calculates $x^d \equiv c \pmod{n}$, and c is transmitted to Mr. Akiyama. The receiver, Mr. Akiyama obtains x from $x^d \equiv x \pmod{n}$. In other words, x is obtained by using the [law of n and by calculating c to the power of d .] modulo n calculation from the d th power of c .

On page 30, last paragraph

Consider a case using 2 character arrangements. Regarding telephones, the problem of the processing speed is the largest problem. Among the operation having reversibility and also [can perform] performing at high speed, is an operation taking exclusive or (XOR). Calculated as following, $[0X0R0=0, 0X0R1=1, 1X0R0=1, \text{ and } 1X0R1=0]$ $0X0R0=0, 0X0R1=1, 1X0R0=1, \text{ and } 1X0R1=0$. The basic mode using this regarding ordered pair system is described in the following.

On Page 31, 1st, 2nd, 4th, and 5th full paragraphs:

Consider a case of a telephone communication between Mr. S and Mr. R. For example, the content of the telephone memory of Mr. S and the content of the telephone memory of Mr. R are shown in figure 17 (a), and figure 17 (b) respectively. In the figures, words in quotation marks are alphabets representing Japanese characters with hyphens separating each represented character.

Suppose that Mr. S said to Mr. R, <[Today] こんにちば> "Ko-n-ni-chi-wa" meaning "hello" in Japanese...> The result of digitalization of the analog voice signal is, 0x1216, 0x0800, 0x1182.... When JIS code was used as the character code, <あおいそら> ("a-o-i-so-ra" a Japanese word for "blue sky" consisting of 5 characters written using Japanese characters called Hiragana)...> will be, 0x2422, 0x242A, 0x2424, 0x243D, 0x2469..., and <Oaufefhgoo...> becomes, 0x4f, 0x62....

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On Page 32, 4th full paragraph:

For example, as shown in figure 18 (a), the use of character arrangement having the length of 3 <はてな("ha-te-na" a Japanese word for "let me see" consisting of 3 characters written in Hiragana)...> and character arrangement having the length of 5 <あおいそら(a-o-i-so-ra)...>, would be the same as using a key having a length of 15.



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ATTORNEY DOCKET NO. 058856-0109

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PROPOSED CHANGES TO THE DRAWINGS

Commissioner for Patents
Washington, D.C. 20231

Sir:

Applicant proposes to amend Figure 3 as shown in red on the attached copies.
With the Examiner's approval, the changes will be made to the formal drawings in due course.

Note that Figures 17 and 18 have been substituted to change Japanese characters to English characters.

Respectfully submitted,

William T. Ellis
Attorney for Applicant
Registration No. 26,874

March 15, 2002

Date

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Fig.3

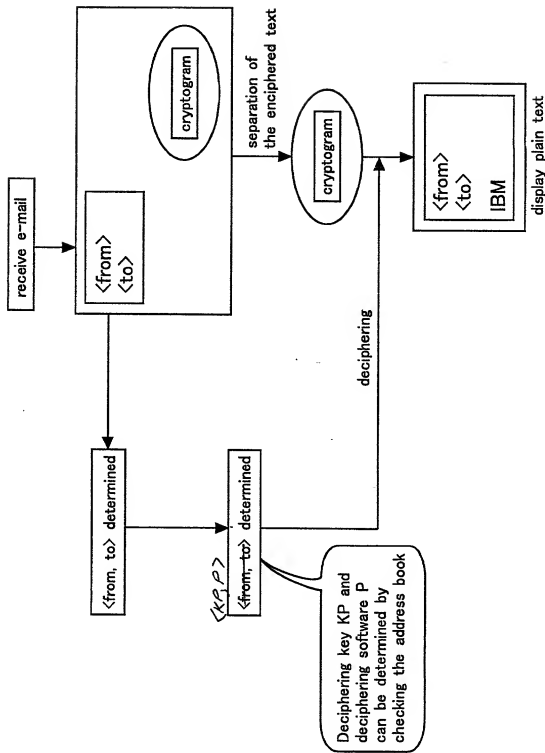


Fig.17

(a) the memory contents of Mr. S's telephone
the telephone No. of Mr. S is 0901111 . . .

destination (number)	enciphering key 1	enciphering key 2	deciphering key 1	deciphering key 2
0902222...	"a-o-l-so-ra" あおれそら...	Oaufefhgoo...	Abdefg...	"na-o-i-ka-ra" なにから...
0903333...	"a" "a" あBRあEW...	"ra-mi" "a-ra" Cあみ1あら...	"i-so" "ra" Jじそくら	"a" "a" あbあtyo...

(b) the memory contents of Mr. R's telephone
the telephone No. of Mr. R is 0902222 . . .

destination (number)	enciphering key 1	enciphering key 2	deciphering key 1	deciphering key 2
0901111...	Abdefg...	"a-o-i-ka-ra" あおれそら...	"a-o-l-so-ra" あおれそら...	Oaufefhgoo...
0903333...	Aaaggw...	A587XO...	4h3yg8jg85...	"ra" XoooあR...

Fig. 18

voice	こゝろにちわい (Kō-ni-chi-wa) ("Hello" in Japanese)
key 1	こゝろにちわい (Kō-ni-chi-wa) ("Hello" in Japanese)
key 2	こゝろにちわい (Kō-ni-chi-wa) ("Hello" in Japanese)

(a)

key 1	こゝろにちわい (Kō-ni-chi-wa) ("Hello" in Japanese character)	1,024 bytes
key 2	adfeohrhorhohf...	997 bytes
key 3	16467428744456...	991 bytes

(b)